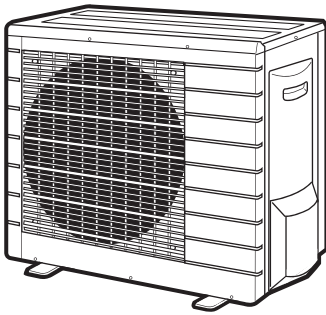




Installation manual

R410A split series



RXS50K2V1B
RXS60F4V1B
RXG50K3V1B
RX50G3V1B
RX60G3V1B
RXS50L2V1B
RXS60L2V1B
RX60G4V1B

ARXS50G3V1B
ARXS50L2V1B
ARXS60L2V1B
ARXS71L2V1B

Table of Contents

1	About this document	6
1.1	Meaning of warnings and symbols	6
2	General safety precautions	7
3	About the box	8
3.1	Outdoor unit.....	8
3.1.1	To remove the accessories from the outdoor unit.....	8
4	Preparation	8
4.1	Preparing installation site	8
4.1.1	Installation site requirements of the outdoor unit	8
4.1.2	Additional installation site requirements of the outdoor unit in cold climates	9
4.2	Preparing refrigerant piping.....	9
4.2.1	Refrigerant piping requirements.....	9
4.2.2	Refrigerant piping insulation	9
5	Installation	10
5.1	Opening the units	10
5.1.1	To open the outdoor unit.....	10
5.2	Mounting the outdoor unit.....	10
5.2.1	To provide the installation structure	10
5.2.2	To install the outdoor unit.....	11
5.2.3	To provide drainage	11
5.2.4	To prevent the outdoor unit from falling over	11
5.3	Connecting the refrigerant piping	12
5.3.1	Precautions when connecting the refrigerant piping ...	12
5.3.2	Guidelines when connecting the refrigerant piping	12
5.3.3	Pipe bending guidelines	12
5.3.4	To flare the pipe end	12
5.3.5	Using the stop valve and service port	13
5.3.6	To connect the refrigerant piping to the outdoor unit ..	13
5.4	Checking the refrigerant piping	14
5.4.1	To check for leaks	14
5.4.2	To perform vacuum drying	14
5.5	Charging refrigerant	14
5.5.1	To determine the additional refrigerant amount.....	14
5.5.2	To charge refrigerant	14
5.5.3	To fix the fluorinated greenhouse gases label	15
5.6	Connecting the electrical wiring.....	15
5.6.1	Specifications of standard wiring components.....	16
5.6.2	To connect the electrical wiring on the outdoor unit....	16
5.6.3	Saving electricity using the standby mode.....	16
5.6.4	Cooling equipment and computer rooms at low outdoor temperatures.....	17
5.7	Finishing the outdoor unit installation	17
5.7.1	To finish the outdoor unit installation	17
6	Commissioning	17
6.1	Precautions when commissioning	17
6.2	Checklist before commissioning	17
6.3	To perform a test run	18
6.4	To start and stop forced cooling	18
6.5	Starting up the outdoor unit.....	18
7	Disposal	18
7.1	To pump down.....	18
8	Technical data	19
8.1	Wiring diagram	19

1 About this document

Target audience

Authorised installers



INFORMATION

This appliance is intended to be used by expert or trained users in shops, in light industry, and on farms, or for commercial and household use by lay persons.

Documentation set

This document is part of a documentation set. The complete set consists of:

- **Outdoor unit Installation manual:**
 - Installation instructions
 - Format: Paper (in the box of the outdoor unit)

Latest revisions of the supplied documentation may be available on the regional Daikin website or via your dealer.

The original documentation is written in English. All other languages are translations.

Technical engineering data

- A **subset** of the latest technical data is available on the regional Daikin website (publicly accessible).
- The **full set** of latest technical data is available on the Daikin extranet (authentication required).

1.1 Meaning of warnings and symbols



DANGER

Indicates a situation that results in death or serious injury.



DANGER: RISK OF ELECTROCUTION

Indicates a situation that could result in electrocution.



DANGER: RISK OF BURNING

Indicates a situation that could result in burning because of extreme hot or cold temperatures.



DANGER: RISK OF EXPLOSION

Indicates a situation that could result in explosion.



WARNING

Indicates a situation that could result in death or serious injury.



WARNING: FLAMMABLE MATERIAL



CAUTION

Indicates a situation that could result in minor or moderate injury.



NOTICE



Indicates a situation that could result in equipment or property damage.



INFORMATION

Indicates useful tips or additional information.

Symbol	Explanation
	Before installation, read the installation and operation manual, and the wiring instruction sheet.

Symbol	Explanation
	Before performing maintenance and service tasks, read the service manual.
	For more information, see the installer and user reference guide.

2 General safety precautions

- The precautions described in this document cover very important topics, follow them carefully.
- The installation of the system, and all activities described in the installation manual must be performed by an authorized installer.
- Make sure the installation site withstands the unit's weight and vibration.



WARNING

Take sufficient precautions in case of refrigerant leakage. If refrigerant gas leaks, ventilate the area immediately. Possible risks:

- Excessive refrigerant concentrations in a closed room can lead to oxygen deficiency.
- Toxic gas may be produced if refrigerant gas comes into contact with fire.



NOTICE

Improper installation or attachment of equipment or accessories could result in electric shock, short-circuit, leaks, fire or other damage to the equipment. Only use accessories, optional equipment and spare parts made or approved by Daikin.



WARNING

Ask your dealer to move and reinstall the air conditioner. Incomplete installation may result in a water leakage, electric shock, and fire.



WARNING

Never replace a fuse with a fuse of a wrong ampere ratings or other wires when a fuse blows out. Use of wire or copper wire may cause the unit to break down or cause a fire.



CAUTION

After a long use, check the unit stand and fitting for damage. If damaged, the unit may fall and result in injury.



CAUTION

To avoid injury, do NOT touch the air inlet or aluminium fins of the unit.



WARNING

Do not place objects in direct proximity of the outdoor unit and do not let leaves and other debris accumulate around the unit. Leaves are a hotbed for small animals which can enter the unit. Once in the unit, such animals can cause malfunctions, smoke or fire when making contact with electrical parts.



INFORMATION

The sound pressure level is less than 70 dBA.



WARNING

- Do not modify, disassemble, remove, reinstall or repair the unit yourself as incorrect dismantling or installation may cause an electric shock or fire. Contact your dealer.
- In case of accidental refrigerant leaks, make sure there are no naked flames. The refrigerant itself is entirely safe, non-toxic and non-combustible, but it will generate toxic gas when it accidentally leaks into a room where combustible air from fan heaters, gas cookers, etc. is present. Always have qualified service personnel confirm that the point of leakage has been repaired or corrected before resuming operation.



WARNING

Ask your dealer to install and reinstall the air conditioner. Incomplete installation may result in a water leakage, electric shock, and fire.



NOTICE

During pump down operation, stop the compressor before removing the refrigerant piping. If the compressor is still running and the stop valve is open during pump down, air will be sucked into the system. Compressor breakage and other injury will be the result due to abnormal pressure in the refrigerant cycle.



WARNING

Do not install the air conditioner at any place where flammable gas may leak out. If the gas leaks out and stays around the air conditioner, a fire may break out.



WARNING

Make sure installation, testing and applied materials comply with applicable legislation (on top of the instructions described in the Daikin documentation).



DANGER: RISK OF BURNING

- Do NOT touch the refrigerant piping, water piping or internal parts during and immediately after operation. It could be too hot or too cold. Give it time to return to normal temperature. If you must touch it, wear protective gloves.
- Do NOT touch any accidental leaking refrigerant.



WARNING

All field wiring and components must be installed by a licensed electrician and must comply with the applicable legislation.



WARNING

In order to avoid electric shock or fire, make sure that an earth leak detector is installed.

3 About the box

WARNING

- ONLY use copper wires.
- Make sure the field wiring complies with the applicable legislation.
- All field wiring must be performed in accordance with the wiring diagram supplied with the product.
- NEVER squeeze bundled cables and make sure they do not come in contact with the piping and sharp edges. Make sure no external pressure is applied to the terminal connections.
- Make sure to install earth wiring. Do NOT earth the unit to a utility pipe, surge absorber, or telephone earth. Incomplete earth may cause electrical shock.
- Make sure to use a dedicated power circuit. NEVER use a power supply shared by another appliance.
- Make sure to install the required fuses or circuit breakers.
- Make sure to install an earth leakage protector. Failure to do so may cause electric shock or fire.
- When installing the earth leakage protector, make sure it is compatible with the inverter (resistant to high frequency electric noise) to avoid unnecessary opening of the earth leakage protector.

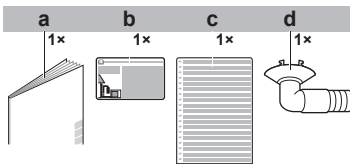
WARNING

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

3 About the box

3.1 Outdoor unit

3.1.1 To remove the accessories from the outdoor unit



- a Outdoor unit installation manual
- b Fluorinated greenhouse gases label
- c Multilingual fluorinated greenhouse gases label
- d Drain plug (located at bottom of packing case)

4 Preparation

4.1 Preparing installation site

- Choose the installation location with sufficient place for carrying the unit in and out of the site.
- Choose a location where the hot/cold air discharged from the unit or the operation noise, will NOT disturb anyone.
- Sound sensitive areas (e.g. near a bedroom and the like), so that the operation noise will cause no trouble.
- Provide sufficient space around the unit for servicing and air circulation.
- Avoid areas where flammable gas or product might leak.

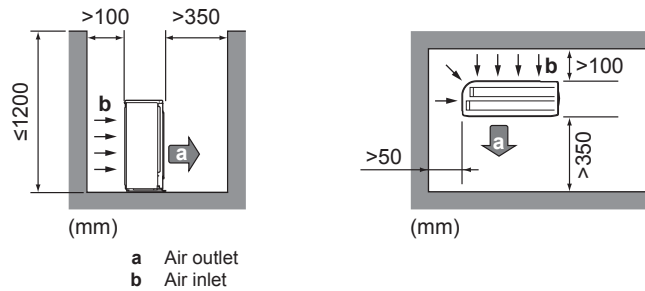
Install power cables at least 1 metre away from televisions or radios to prevent interference. Depending on the radio waves, a distance of 3 metre may not be sufficient.

WARNING

Do NOT place objects below the indoor and/or outdoor unit that may get wet. In this condition, condensation on the main unit or refrigerant pipes, air filter dirt or drain blockage may cause dripping. This results in fouling or failure of the object which is located beneath the unit.

4.1.1 Installation site requirements of the outdoor unit

Mind the following spacing guidelines:



NOTICE

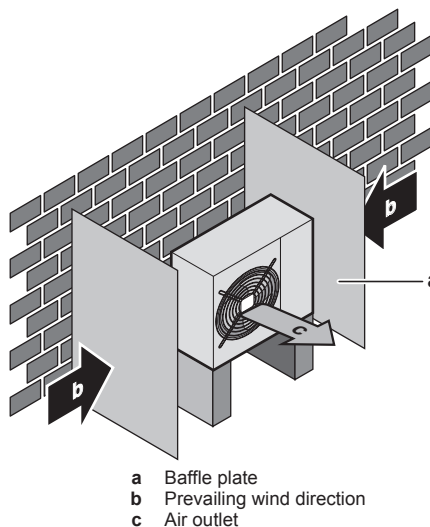
- Do NOT stack the units on each other.
- Do NOT hang the unit on a ceiling.

Strong winds (≥ 18 km/h) blowing against the outdoor unit's air outlet causes short circuit (suction of discharge air). This may result in:

- deterioration of the operational capacity;
- frequent frost acceleration in heating operation;
- disruption of operation due to decrease of low pressure or increase of high pressure;
- a broken fan (if a strong wind blows continuously on the fan, it may start rotating very fast, until it breaks).

It is recommended to install a baffle plate when the air outlet is exposed to wind.

It is recommended to install the outdoor unit with the air inlet facing the wall and NOT directly exposed to the wind.



Do NOT install the unit in the following places:

- In places where a mineral oil mist, spray or vapour may be present in the atmosphere. Plastic parts may deteriorate and fall off or cause water leakage.

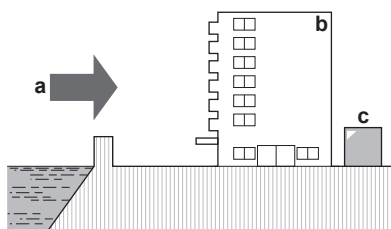
It is NOT recommended to install the unit in the following places because it may shorten the life of the unit:

- Where the voltage fluctuates a lot
- In vehicles or vessels
- Where acidic or alkaline vapour is present

Seaside installation. Make sure the outdoor unit is NOT directly exposed to sea winds. This is to prevent corrosion caused by high levels of salt in the air, which might shorten the life of the unit.

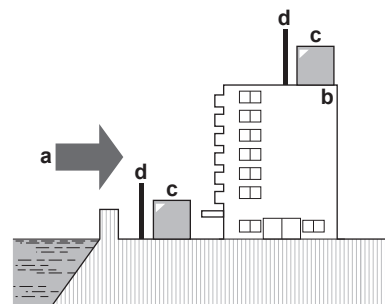
Install the outdoor unit away from direct sea winds.

Example: Behind the building.



If the outdoor unit is exposed to direct sea winds, install a windbreaker.

- Height of windbreaker $\geq 1.5 \times$ height of outdoor unit
- Mind the service space requirements when installing the windbreaker.



- a Sea wind
- b Building
- c Outdoor unit
- d Windbreaker

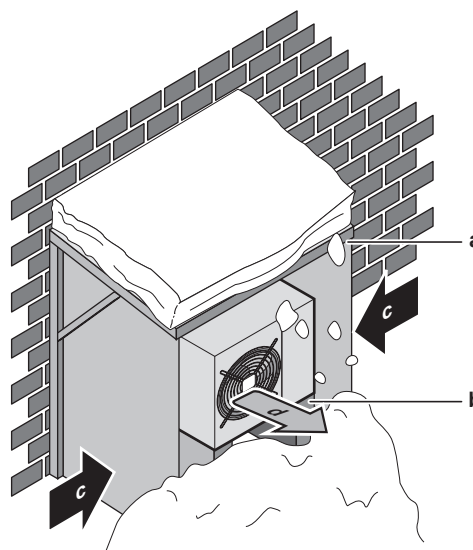
The outdoor unit is designed for outdoor installation only, and for ambient temperatures ranging:

Models	Heating mode	Cooling mode
RXS50K2V1B	-15~18°C	-10~46°C
RXS60F4V1B		
RX50~60G3V1B		
RXS50~60L2V1B		
RX60G4V1B		
ARXS50G3V1B		
ARXS50~71L2V1B	-15~18°C	10~46°C
RXG50K3V1B		

What?	Distance
Maximum allowable pipe length	30 m
Minimum allowable pipe length	3 m
Maximum allowable height distance	20 m

4.1.2 Additional installation site requirements of the outdoor unit in cold climates

Protect the outdoor unit against direct snowfall and take care that the outdoor unit is NEVER snowed up.



- a Snow cover or shed
- b Pedestal
- c Prevailing wind direction
- d Air outlet

- In any case, provide at least 300 mm of free space below the unit. Additionally, make sure the unit is positioned at least 100 mm above the maximum expected level of snow. See "5.2 Mounting the outdoor unit" on page 10 for more details.

In heavy snowfall areas it is very important to select an installation site where the snow will NOT affect the unit. If lateral snowfall is possible, make sure that the heat exchanger coil is NOT affected by the snow. If necessary, install a snow cover or shed and a pedestal.

4.2 Preparing refrigerant piping

4.2.1 Refrigerant piping requirements

- **Piping material:** Phosphoric acid deoxidised seamless copper.
- **Piping diameter:**

Class 50 and 60	
Liquid piping	Ø6.4 mm (1/4")
Gas piping	Ø12.7 mm (1/2")

Class 71	
Liquid piping	Ø9.5 mm (3/8")
Gas piping	Ø15.9 mm (5/8")

- **Piping temper grade and thickness:**

Outer diameter (Ø)	Temper grade	Thickness (t) ^(a)	
6.4 mm (1/4")	Annealed (O)	≥0.8 mm	
9.5 mm (3/8")		≥1 mm	
12.7 mm (1/2")		≥0.8 mm	
15.9 mm (5/8")		≥1 mm	

- (a) Depending on the applicable legislation and the unit's maximum working pressure (see "PS High" on the unit name plate), larger piping thickness might be required.

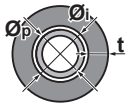
4.2.2 Refrigerant piping insulation

If the temperature is higher than 30°C and the humidity is higher than RH 80%, the thickness of the insulation materials should be at least 20 mm to prevent condensation on the surface of the insulation.

5 Installation

- Use polyethylene foam as insulation material:
 - with a heat transfer rate between 0.041 and 0.052 W/mK (0.035 and 0.045 kcal/mh°C)
 - with a heat resistance of at least 120°C
- Insulation thickness

Pipe outer diameter (\varnothing_p)	Insulation inner diameter (\varnothing_i)	Insulation thickness (t)
6.4 mm (1/4")	8~10 mm	≥10 mm
9.5 mm (3/8")	10~14 mm	≥13 mm
12.7 mm (1/2")	14~16 mm	≥10 mm
15.9 mm (5/8")	16~20 mm	≥13 mm



5 Installation

5.1 Opening the units

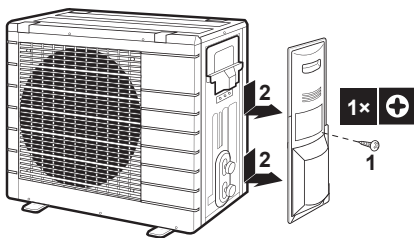
5.1.1 To open the outdoor unit



DANGER: RISK OF ELECTROCUTION



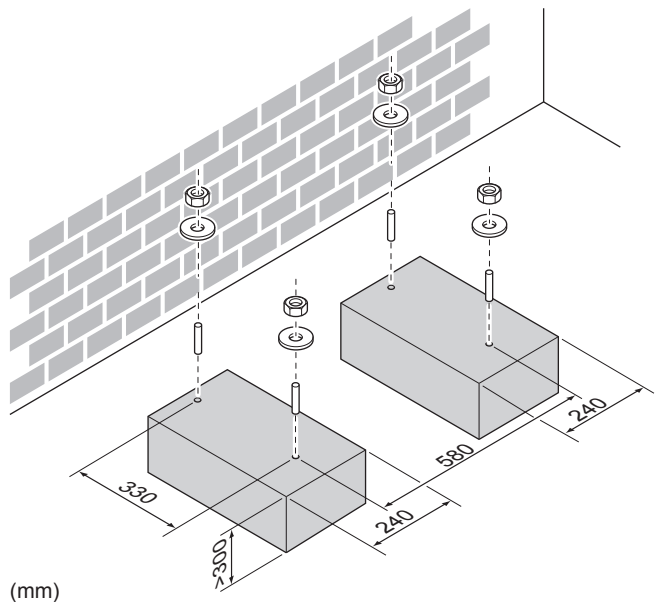
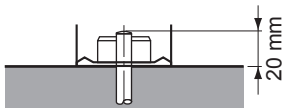
DANGER: RISK OF BURNING



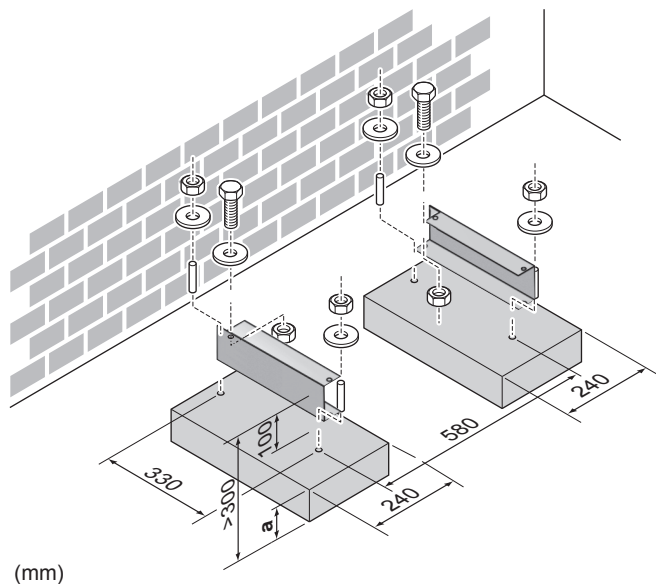
5.2 Mounting the outdoor unit

5.2.1 To provide the installation structure

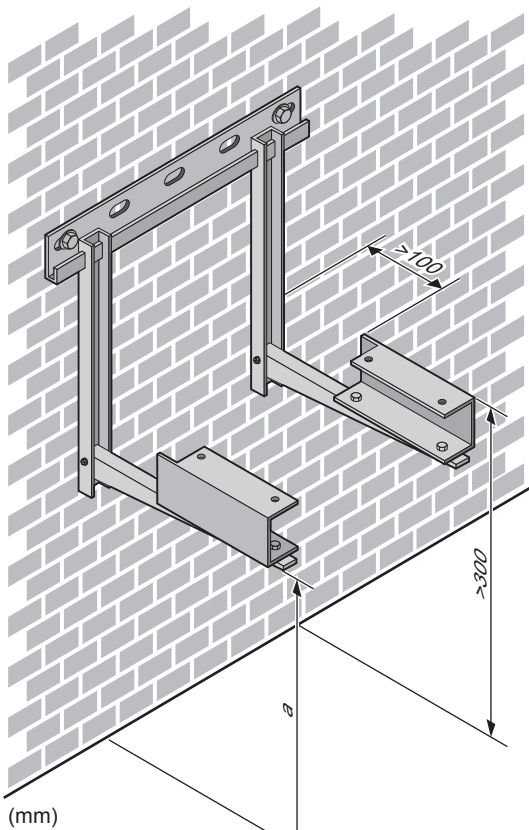
- Check the strength and level of the installation ground so that the unit will not cause any operating vibration or noise after installation.
- Prepare 4 sets of M8 or M10 anchor bolts, nuts and washers each (field supply).
- Fix the unit securely with anchor bolts.



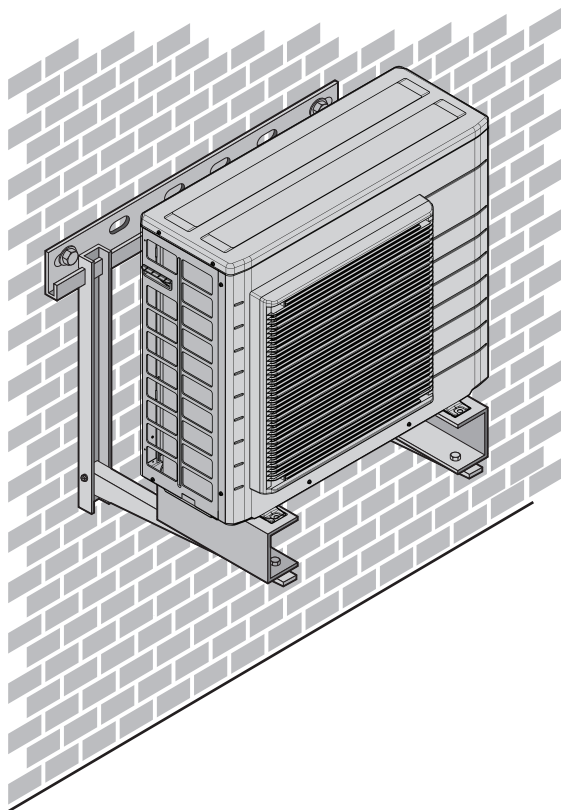
In any case, provide at least 300 mm of free space below the unit. Additionally, make sure the unit is positioned at least 100 mm above the maximum expected level of snow. In this case, it is recommended to construct a pedestal.



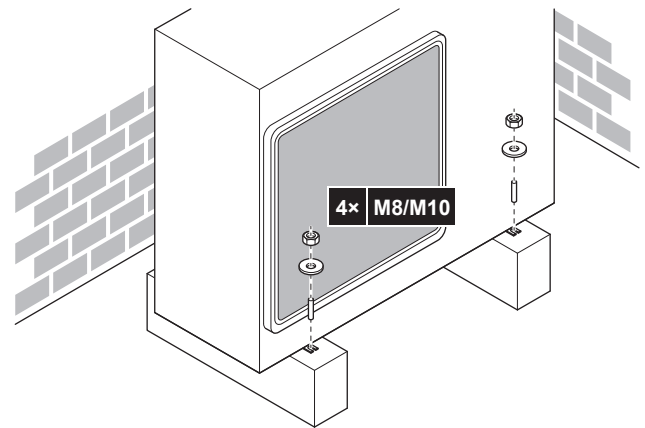
If the unit is installed on brackets to the wall, install the unit as follows:



a Maximum snowfall height



5.2.2 To install the outdoor unit



5.2.3 To provide drainage

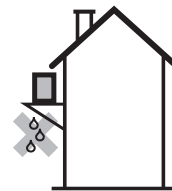
Make sure that condensation water can be evacuated properly.



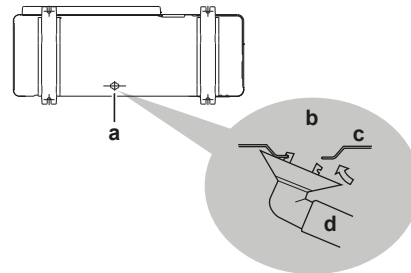
NOTICE

If the drain holes of the outdoor unit are blocked up, provide space of at least 300 mm below the outdoor unit.

- Install the unit on a base to make sure that there is a proper drainage in order to avoid ice accumulation.
- Prepare a water drainage channel around the foundation to drain waste water surrounding the unit.
- Avoid drain water flowing over the footpath, so that it does not become slippery in case of ambient freezing temperatures.
- If you install the unit on a frame, install a waterproof plate within 150 mm of the bottom side of the unit in order to prevent the invasion of water in the unit and to avoid the drain water dripping (see the following illustration).



- Use a drain plug for drainage if necessary.



- a Drain hole
- b Drain plug
- c Bottom frame
- d Drain hose (Ø16 mm, field supply)

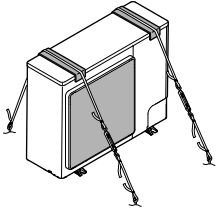
5.2.4 To prevent the outdoor unit from falling over

In case the unit is installed in places where strong wind can tilt the unit, take following measure:

- 1 Prepare 2 cables as indicated in the following illustration (field supply).
- 2 Place the 2 cables over the outdoor unit.

5 Installation

- Insert a rubber sheet between the cables and the outdoor unit to prevent the cable from scratching the paint (field supply).
- Attach the cable's ends. Tighten those ends.



5.3 Connecting the refrigerant piping



DANGER: RISK OF BURNING

5.3.1 Precautions when connecting the refrigerant piping



CAUTION

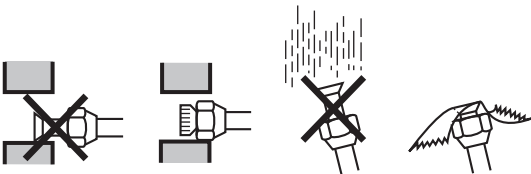
- Do NOT use mineral oil on flared part.
- Do NOT reuse piping from previous installations.
- NEVER install a drier to this R410A unit to guarantee its lifetime. The drying material may dissolve and damage the system.



NOTICE

Take the following precautions on refrigerant piping into account:

- Avoid anything but the designated refrigerant to get mixed into the refrigerant cycle (e.g. air).
- Only use R410A when adding refrigerant.
- Only use installation tools (e.g. manifold gauge set) that are exclusively used for R410A installations to withstand the pressure and to prevent foreign materials (e.g. mineral oils and moisture) from mixing into the system.
- Install the piping so that the flare is NOT subjected to mechanical stress
- Protect the piping as described in the following table to prevent dirt, liquid or dust from entering the piping.
- Use caution when passing copper tubes through walls (see figure below).



Unit	Installation period	Protection method
Outdoor unit	>1 month	Pinch the pipe
	<1 month	Pinch or tape the pipe
Indoor unit	Regardless of the period	



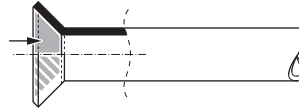
INFORMATION

Do NOT open the refrigerant stop valve before checking the refrigerant piping. When you need to charge additional refrigerant it is recommended to open the refrigerant stop valve after charging.

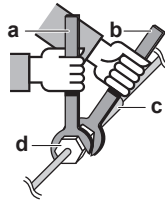
5.3.2 Guidelines when connecting the refrigerant piping

Take the following guidelines into account when connecting pipes:

- Coat the flare inner surface with ether oil or ester oil when connecting a flare nut. Tighten 3 or 4 turns by hand, before tightening firmly.



- Always use two wrenches together when loosening a flare nut.
- Always use a spanner and torque wrench together to tighten the flare nut when connecting the piping. This to prevent nut cracking and leaks.



- a Torque wrench
- b Spanner
- c Piping union
- d Flare nut

Piping size (mm)	Tightening torque (N·m)	Flare dimensions (A) (mm)	Flare shape (mm)
Ø6.4	14.2~17.2	8.7~9.1	
Ø9.5	32.7~39.9		
Ø12.7	49.5~60.3	16.2~16.6	
Ø15.9	61.8~75.4	19.3~19.7	

5.3.3 Pipe bending guidelines

Use a pipe bender for bending. All pipe bends should be as gentle as possible (bending radius should be 30~40 mm or larger).

5.3.4 To flare the pipe end



CAUTION

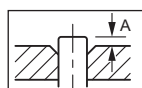
- Incomplete flaring may cause refrigerant gas leakage.
- Do NOT re-use flares. Use new flares to prevent refrigerant gas leakage.
- Use flare nuts that are included with the unit. Using different flare nuts may cause refrigerant gas leakage.

- Cut the pipe end with a pipe cutter.
- Remove burrs with the cut surface facing downward so that the chips do not enter the pipe.



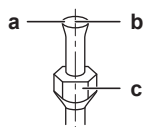
- a Cut exactly at right angles.
- b Remove burrs.

- Remove the flare nut from the stop valve and put the flare nut on the pipe.
- Flare the pipe. Set exactly at the position as shown in the following illustration.



	Flare tool for R410A (clutch type)	Conventional flare tool	
		Clutch type (Ridgid-type)	Wing nut type (Imperial-type)
A	0~0.5 mm	1.0~1.5 mm	1.5~2.0 mm

5 Check that the flaring is properly made.



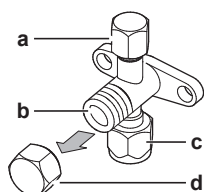
- a Flare's inner surface must be flawless.
- b The pipe end must be evenly flared in a perfect circle.
- c Make sure the flare nut is fitted.

5.3.5 Using the stop valve and service port

To handle the stop valve

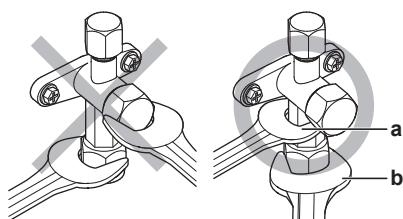
Take the following guidelines into account:

- The stop valves are factory closed.
- The following illustration shows each part required in handling the valve.



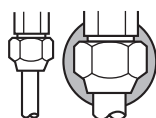
- a Service port and service port cap
- b Valve stem
- c Field piping connection
- d Stem cap

- Keep both stop valves open during operation.
- Do NOT apply excessive force to the valve stem. Doing so may break the valve body.
- Always make sure to secure the stop valve with a spanner, then loosen or tighten the flare nut with a torque wrench. Do NOT place the spanner on the stem cap, as this could cause a refrigerant leak.



- a Spanner
- b Torque wrench

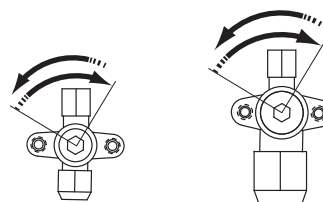
- When it is expected that the operating pressure will be low (e.g. when cooling will be performed while the outside air temperature is low), sufficiently seal the flare nut in the stop valve on the gas line with silicon sealant to prevent freezing.



■ Silicon sealant, make sure there is no gap.

To open/close the stop valve

- 1 Remove the valve cover.
- 2 Insert a hexagon wrench (liquid side: 4 mm, gas side: 6 mm) into the valve stem and turn the valve stem:



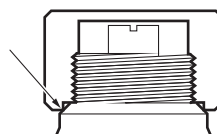
Counterclockwise to open.
Clockwise to close.

- 3 When the valve stem cannot be turned any further, stop turning. The valve is now opened/closed.

To handle the stem cap

Take the following guidelines into account:

- The stem cap is sealed where indicated with the arrow. Do NOT damage it.



- After handling the stop valve, make sure to tighten the stem cap securely.
- For the tightening torque, refer to the following table.
- Check for refrigerant leaks after tightening the stem cap.

Item	Tightening torque (N·m)
Stem cap, liquid side	21.6~27.4 ^(a)
	32.7~39.9 ^(b)
Stem cap, gas side	48.1~59.7 ^(a)
	60.1~74.6 ^(b)
Service port cap	10.8~14.7

- (a) For class 50 and 60.
- (b) For class 71.

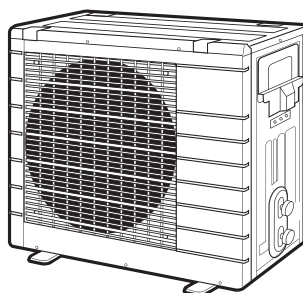
To handle the service cap

Take the following guidelines into account:

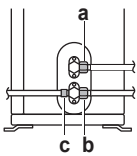
- Always use a charge hose equipped with a valve depressor pin, since the service port is a Schrader type valve.
- After handling the service port, tighten the service port cap securely. For the tightening torque, refer to the table in chapter "To handle the stem cap" on page 13.
- Check for refrigerant leaks after tightening the service port cap.

5.3.6 To connect the refrigerant piping to the outdoor unit

- 1 Connect the liquid refrigerant connection from the indoor unit to the liquid stop valve of the outdoor unit.



5 Installation



- a Liquid stop valve
- b Gas stop valve
- c Service port

- Connect the gas refrigerant connection from the indoor unit to the refrigerant stop valve of the outdoor unit.

5.4 Checking the refrigerant piping

5.4.1 To check for leaks



NOTICE

Do NOT exceed the unit's maximum working pressure (see "PS High" on the unit name plate).



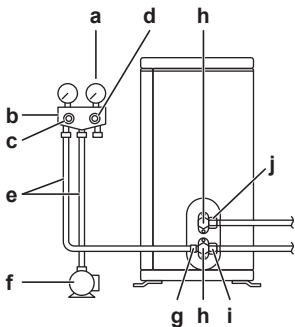
NOTICE

Make sure to use a recommended bubble test solution from your wholesaler. Do not use soap water, which may cause cracking of flare nuts (soap water may contain salt, which absorbs moisture that will freeze when the piping gets cold), and/or lead to corrosion of flared joints (soap water may contain ammonia which causes a corrosive effect between the brass flare nut and the copper flare).

- Charge the system with nitrogen gas up to a gauge pressure of at least 200 kPa (2 bar). It is recommended to pressurize to 3000 kPa (30 bar) in order to detect small leaks.
- Check for leaks by applying the bubble test solution to all connections.
- Discharge all nitrogen gas.

5.4.2 To perform vacuum drying

Connect the vacuum pump and manifold as follows:



- a Pressure meter
- b Gauge manifold
- c Low-pressure valve (Lo)
- d High-pressure valve (Hi)
- e Charging hoses
- f Vacuum pump
- g Service port
- h Valve lids
- i Gas stop valve
- j Liquid stop valve

- Vacuum the system until the pressure on the manifold indicates -0.1 MPa (-1 bar).
- Leave as is for 4-5 minutes and check the pressure:

If the pressure...	Then...
Does not change	There is no moisture in the system. This procedure is finished.

If the pressure...	Then...
Increases	There is moisture in the system. Go to the next step.

- Evacuate for at least 2 hours to a pressure on the manifold of -0.1 MPa (-1 bar).
- After turning OFF the pump, check the pressure for at least 1 hour.
- If you do NOT reach the target vacuum or cannot maintain the vacuum for 1 hour, do the following:
 - Check for leaks again.
 - Perform vacuum drying again.



NOTICE

Be sure to open the gas stop valve after piping installation and vacuuming. Running the system with the valve closed, the compressor may break down.

5.5 Charging refrigerant

5.5.1 To determine the additional refrigerant amount

If the total liquid piping length is...	Then...
≤ 10 m	Do NOT add additional refrigerant.
> 10 m	$R = (\text{total length (m) of liquid piping} - 10) \times 0.020$ $R = \text{Additional charge (kg)} (\text{rounded in units of } 0.1 \text{ kg})$



INFORMATION



Piping length is the one way length of liquid piping.

5.5.2 To charge refrigerant



WARNING

- Only use R410A as refrigerant. Other substances may cause explosions and accidents.
 - R410A contains fluorinated greenhouse gases. Its global warming potential (GWP) value is 2087.5. Do NOT vent these gases into the atmosphere.
 - When charging refrigerant, always use protective gloves and safety glasses.
- Only use tools exclusively for the refrigerant type used in the system, this to ensure pressure resistance and prevent foreign materials from entering into the system.
 - Charge the liquid refrigerant as follows:

If	Then
A siphon tube is present (i.e., the cylinder is marked with "Liquid filling siphon attached")	Charge with the cylinder upright. 
A siphon tube is NOT present	Charge with the cylinder upside down. 

- Open refrigerant cylinders slowly.
- Charge the refrigerant in liquid form. Adding it in gas form may prevent normal operation.

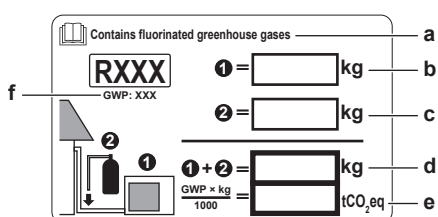
Prerequisite: Before charging refrigerant, make sure the refrigerant piping is connected and checked (leak test and vacuum drying).

- 1 Connect the refrigerant cylinder to the service port.
- 2 Charge the additional refrigerant amount.
- 3 Open the gas stop valve.

If pump down is needed in case of dismantling or relocating the system, see "7.1 To pump down" on page 18 for more details.

5.5.3 To fix the fluorinated greenhouse gases label

- 1 Fill in the label as follows:



- If a multilingual fluorinated greenhouse gases label is delivered with the unit (see accessories), peel off the applicable language and stick it on top of a.
- Factory refrigerant charge: see unit name plate
- Additional refrigerant amount charged
- Total refrigerant charge
- Greenhouse gas emissions** of the total refrigerant charge expressed as tonnes CO₂-equivalent
- GWP = Global warming potential

NOTICE

In Europe, the **greenhouse gas emissions** of the total refrigerant charge in the system (expressed as tonnes CO₂-equivalent) is used to determine the maintenance intervals. Follow the applicable legislation.

Formula to calculate the greenhouse gas emissions:

$$\text{GWP value of the refrigerant} \times \text{Total refrigerant charge [in kg]} / 1000$$

5.6 Connecting the electrical wiring

DANGER: RISK OF ELECTROCUTION

WARNING

ALWAYS use multicore cable for power supply cables.

WARNING

- Do NOT turn on the power supply before all wire connections are completed. Not doing so may cause an electric shock.
- After the wiring is completed, double-check that all wires are connected correctly before turning on the power supply.
- All field supplied parts, materials and electric works MUST comply with the applicable legislation.

WARNING

- After finishing the electrical work, confirm that each electrical component and terminal inside the electrical components box is connected securely.
- Make sure all covers are closed before starting up the unit.

WARNING

- If the power supply has a missing or wrong N-phase, equipment might break down.
- Establish proper earthing. Do NOT earth the unit to a utility pipe, surge absorber, or telephone earth. Incomplete earthing may cause electrical shock.
- Install the required fuses or circuit breakers.
- Secure the electrical wiring with cable ties so that the cables do NOT come in contact with sharp edges or piping, particularly on the high-pressure side.
- Do NOT use taped wires, stranded conductor wires, extension cords, or connections from a star system. They can cause overheating, electrical shock or fire.
- Do NOT install a phase advancing capacitor, because this unit is equipped with an inverter. A phase advancing capacitor will reduce performance and may cause accidents.
- Do NOT use field supplied electrical parts inside the unit.
- Do NOT connect the power supply of the indoor unit to the outdoor unit. This could result in electric or fire.
- Do NOT branch the power of other accessories to the terminal block.

NOTICE

Precautions when laying power wiring:

- Do not connect wiring of different thicknesses to the power terminal block (slack in the power wiring may cause abnormal heat).
- When connecting wiring which is the same thickness, do as shown in the figure below.



- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal board.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will damage the head and make proper tightening impossible.
- Over-tightening the terminal screws may break them.

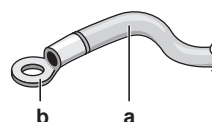
Strip insulation (20 mm) from the wires.



- Strip wire end to this point
- Excessive strip length may cause electrical shock or leakage.

Keep the following in mind:

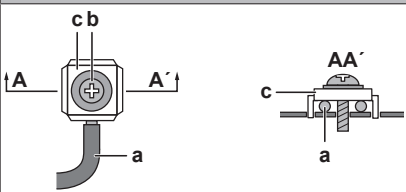
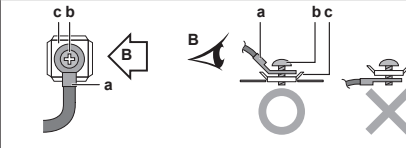
- If stranded conductor wires are being used, install a round crimp-style terminal on the tip. Place the round crimp-style terminal on the wire up to the covered part and fasten the terminal with the appropriate tool.



- Stranded conductor wire
- Round crimp-style terminal

5 Installation

- Use the following methods for installing wires:

Wire type	Installation method
Single core wire	 <p>a Curled single core wire b Screw c Flat washer</p>
Stranded conductor wire with round crimp-style terminal	 <p>a Terminal b Screw c Flat washer</p>

Tightening torques

Item	Tightening torque (N·m)
M4 (X1M)	1.2~1.5
M4 (earth)	

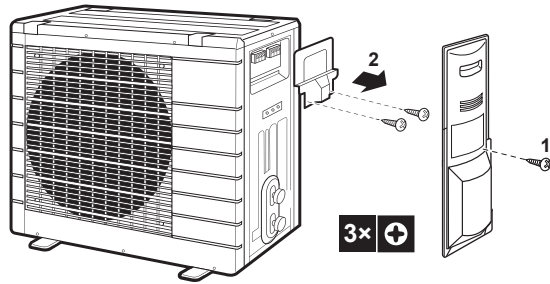
Equipment complying with EN/IEC 61000-3-12 (European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16 A and ≤75 A per phase.).

5.6.1 Specifications of standard wiring components

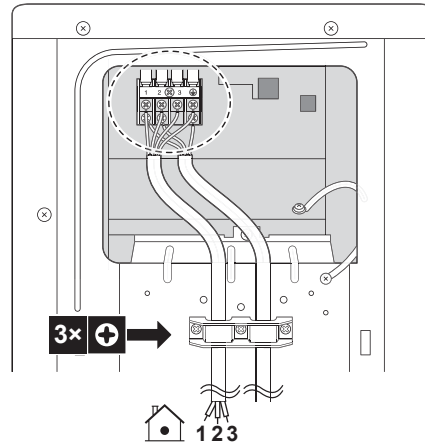
Component		
Power supply cable	Voltage	220~240 V
	Phase	1~
	Frequency	50 Hz
	Wire sizes	Must comply with applicable legislation
Interconnection cable		Minimum cable section of 2.5 mm ² and applicable for 220~240 V
Recommended field fuse		20 A
Earth leakage circuit breaker		Must comply with applicable legislation

5.6.2 To connect the electrical wiring on the outdoor unit

- Remove the outside panel.
- Remove the switch box cover.



- Open the wire clamp.
- Connect the interconnection cable and power supply as follows:



- Tighten the terminal screws securely. We recommend to use a Philips screwdriver.
- Install the switch box cover.
- Install the outside panel.

5.6.3 Saving electricity using the standby mode

About the standby mode

This mode turns OFF the power supply of the outdoor unit and sets the indoor unit into standby mode. It reduce the power consumption of the indoor unit. This mode is only applicable for following models: FTXS50K2V1B, FVXG50K2V1B, FTXG50LV1BW, and FTXG50LV1BS.

i INFORMATION

The standby mode can ONLY used by the units as described above.

! WARNING

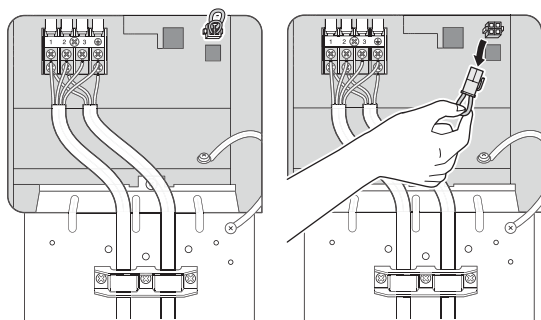
Before connecting or disconnecting the connector, make sure the power is turned OFF.

i INFORMATION

You MUST connect the connector if you use an indoor unit where the standby mode is NOT applicable.

To set the standby mode

- Turn OFF the power supply.
- Remove the outside panel.
- Remove the switch box cover.
- Disconnect the connector for standby mode.



5 Turn ON the power supply

5.6.4 Cooling equipment and computer rooms at low outdoor temperatures

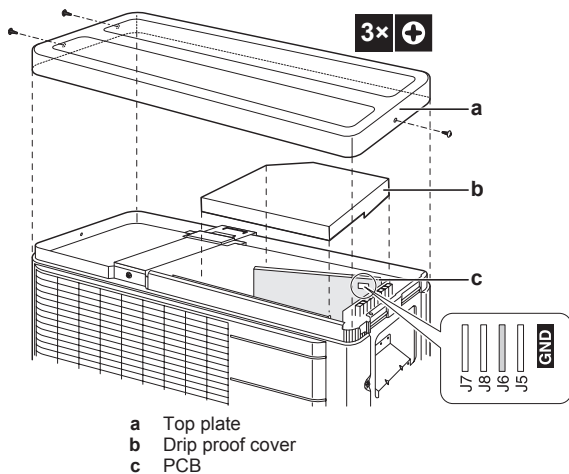
About the facility mode

This mode is especially for cooling applications like equipment or computer rooms. NEVER use in residence or office applications where people occupy.

To set the facility mode

When cutting the jumper J6 on the PCB, the operation range will expand to -15°C . The facility mode will stop if the outdoor temperature goes below -18°C and restarts when the temperature rises again.

- 1 Remove the screws of the top plate.
- 2 Remove the drip proof cover.
- 3 Cut jumper J6 on the PCB.



- a Top plate
b Drip proof cover
c PCB

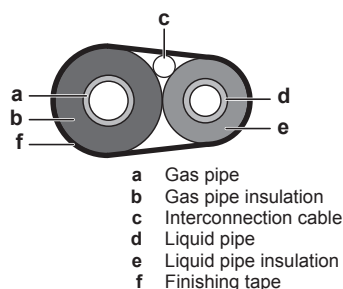
i INFORMATION

- Intermittent noises may be produced by the indoor unit due to the fan of the outdoor unit that is turning ON and/or OFF.
- Do NOT place humidifiers or other items which might raise the humidity in rooms when you use the facility mode.
- Cutting jumper J6 results in highest speed of the indoor unit fan.

5.7 Finishing the outdoor unit installation

5.7.1 To finish the outdoor unit installation

- 1 Insulate and fix the refrigerant piping and interconnection cable as follows:



- 2 Install the service cover.

6 Commissioning



NOTICE

NEVER operate the unit without thermistors and/or pressure sensors/switches. Burning of the compressor might result.

6.1 Precautions when commissioning



INFORMATION

During the first running period of the unit, the required power may be higher than stated on the nameplate of the unit. This phenomenon is caused by the compressor, that needs a continuous run time of 50 hours before reaching smooth operation and stable power consumption.



NOTICE

NEVER operate the unit without thermistors and/or pressure sensors/switches. Burning of the compressor might result.

6.2 Checklist before commissioning

Do NOT operate the system before the following checks are OK:

<input type="checkbox"/>	The indoor unit is properly mounted.
<input type="checkbox"/>	The outdoor unit is properly mounted.
<input type="checkbox"/>	The system is properly earthed and the earth terminals are tightened.
<input type="checkbox"/>	The fuses or locally installed protection devices are installed according to this document, and have not been bypassed.
<input type="checkbox"/>	The power supply voltage matches the voltage on the identification label of the unit.
<input type="checkbox"/>	There are NO loose connections or damaged electrical components in the switch box.
<input type="checkbox"/>	There are NO damaged components or squeezed pipes on the inside of the indoor and outdoor units.
<input type="checkbox"/>	There are NO refrigerant leaks .
<input type="checkbox"/>	The refrigerant pipes (gas and liquid) are thermally insulated.
<input type="checkbox"/>	The correct pipe size is installed and the pipes are properly insulated.
<input type="checkbox"/>	The stop valves (gas and liquid) on the outdoor unit are fully open.
<input type="checkbox"/>	The following field wiring has been carried out according to this document and the applicable legislation between the outdoor unit and the indoor unit.

7 Disposal

<input type="checkbox"/>	Drainage Make sure drainage flows smoothly. Possible consequence: Condensate water might drip.
<input type="checkbox"/>	The indoor unit receives the signals of the remote controller .
<input type="checkbox"/>	The specified wires are used for the interconnection cable .

6.3 To perform a test run

Prerequisite: Power supply must be in the specified range.

Prerequisite: Test run operation may be done in cooling or heating mode.

Prerequisite: Test run should be done in accordance with the operation manual of the indoor unit to make sure that all functions and parts are working properly.

- 1 In cooling mode, select the lowest programmable temperature. In heating mode, select the highest programmable temperature. Test run can be disabled if necessary.
- 2 When test run is finished, set the temperature to a normal level. In cooling mode: 26~28°C, in heating mode: 20~24°C.
- 3 The system stops operating after 3 minutes when you turned the unit OFF.



INFORMATION

- Even if the unit is turned OFF, it consumes electricity.
- When there was a power failure and the power turns back on again, previous selected mode will be continued.

6.4 To start and stop forced cooling

There are 2 methods to perform forced cooling operation:

- 1 when using the ON/OFF switch of the indoor unit (if it's present on the indoor unit),
- 2 when using the outdoor unit forced cooling operation switch.

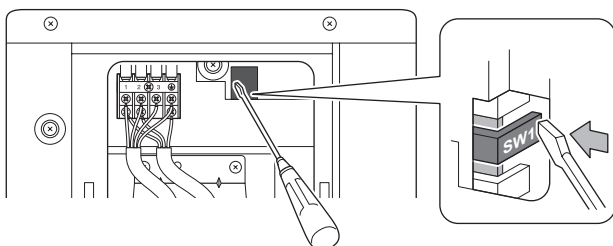
Method 1: When using the ON/OFF switch of the indoor unit

Press the ON/OFF switch for at least 5 seconds.

Result: Operation will start. Forced cooling stops automatically after 15 minutes. To stop the operation, press the ON/OFF switch.

Method 2: When using the outdoor unit

- Turn ON the outdoor unit.
- Push the forced cooling switch (SW1) in less than 3 minutes after turning the power ON. **Result:** Operation starts.
- Forced cooling will stop automatically after 15 minutes. To stop operation, press the switch (SW1).



6.5 Starting up the outdoor unit

See the indoor unit installation manual for configuration and commissioning of the system.

7 Disposal

7.1 To pump down

Example: To protect the environment, pump down when relocating the unit or when disposing of the unit.



DANGER: RISK OF EXPLOSION

Pump down – Refrigerant leakage. If you want to pump down the system, and there is a leakage in the refrigerant circuit:

- Do NOT use the unit's automatic pump down function, with which you can collect all refrigerant from the system into the outdoor unit. **Possible consequence:** Self-combustion and explosion of the compressor because of air going into the operating compressor.
- Use a separate recovery system so that the unit's compressor does NOT have to operate.

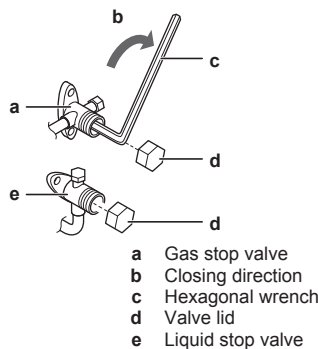


NOTICE

During pump down operation, stop the compressor before removing the refrigerant piping. If the compressor is still running and the stop valve is open during pump down, air will be sucked into the system. Compressor breakage and other injury will be the result due to abnormal pressure in the refrigerant cycle.

Pump down operation will extract all refrigerant from the system into the outdoor unit.





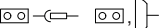











- 1 Remove the valve lid from liquid stop valve and gas stop valve.
- 2 Carry out the forced cooling operation.
- 3 After 5 to 10 minutes (after only 1 or 2 minutes in case of very low ambient temperatures (<-10°C)), close the liquid stop valve with a hexagonal wrench.
- 4 Check with the manifold if the vacuum is reached.
- 5 After 2-3 minutes, close the gas stop valve and stop forced cooling operation.



8 Technical data

A **subset** of the latest technical data is available on the regional Daikin website (publicly accessible). The **full set** of latest technical data is available on the Daikin extranet (authentication required).

8.1 Wiring diagram

Unified Wiring Diagram Legend			
For applied parts and numbering refer to the wiring diagram sticker supplied on the unit. Part numbering is realized by Arabic numbers in ascending order for each part and is represented in the overview below by symbol ^{***} in the part code.			
	: CIRCUIT BREAKER		: PROTECTIVE EARTH
	: CONNECTION		: PROTECTIVE EARTH (SCREW)
	: CONNECTOR		: RECTIFIER
	: EARTH		: RELAY CONNECTOR
	: FIELD WIRING		: SHORT CIRCUIT CONNECTOR
	: FUSE		: TERMINAL
	: INDOOR UNIT		: TERMINAL STRIP
	: OUTDOOR UNIT		: WIRE CLAMP
BLK : BLACK	GRN : GREEN	PNK : PINK	WHT : WHITE
BLU : BLUE	GRY : GREY	PRP, PPL : PURPLE	YLW : YELLOW
BRN : BROWN	ORG : ORANGE	RED : RED	
A*P	: PRINTED CIRCUIT BOARD	PS	: SWITCHING POWER SUPPLY
BS*	: PUSH BUTTON ON / OFF, OPERATION SWITCH	PTC*	: THERMISTOR PTC
BZ, H*O	: BUZZER	Q*	: INSULATED GATE BIPOLAR TRANSISTOR (IGBT)
C*	: CAPACITOR	Q*DI	: EARTH LEAK CIRCUIT BREAKER
AC*, ON*, E*, HA*, HE, HL*, HN*, HR*, MR*, MR*_A, MR*_B, S*, U, V, W, X*A	: CONNECTION, CONNECTOR	Q*L	: OVERLOAD PROTECTOR
D*, V*D	: DIODE	Q*M	: THERMO SWITCH
DB*	: DIODE BRIDGE	R*	: RESISTOR
DS*	: DIP SWITCH	R*T	: THERMISTOR
E*H	: HEATER	RC	: RECEIVER
F*U, FU* (FOR CHARACTERISTICS REFER TO PCB INSIDE YOUR UNIT)	: FUSE	S*C	: LIMIT SWITCH
FG*	: CONNECTOR (FRAME GROUND)	S*L	: FLOAT SWITCH
H*	: HARNESS	S*NPH	: PRESSURE SENSOR (HIGH)
H*P, LED*, V*L	: PILOT LAMP, LIGHT EMITTING DIODE	S*NPL	: PRESSURE SENSOR (LOW)
HAP	: LIGHT EMITTING DIODE (SERVICE MONITOR GREEN)	S*PH, HPS*	: PRESSURE SWITCH (HIGH)
HIGH VOLTAGE	: HIGH VOLTAGE	S*PL	: PRESSURE SWITCH (LOW)
IES	: INTELLIGENT EYE SENSOR	S*T	: THERMOSTAT
IPM*	: INTELLIGENT POWER MODULE	S*W, SW*	: OPERATION SWITCH
K*R, KCR, KFR, KHuR	: MAGNETIC RELAY	SA*	: SURGE ARRESTOR
L	: LIVE	SR*, WLU	: SIGNAL RECEIVER
L*	: COIL	SS*	: SELECTOR SWITCH
L*R	: REACTOR	SHEET METAL	: TERMINAL STRIP FIXED PLATE
M*	: STEPPER MOTOR	T*R	: TRANSFORMER
M*C	: COMPRESSOR MOTOR	TC, TRC	: TRANSMITTER
M*F	: FAN MOTOR	V*, R*V	: VARISTOR
M*P	: DRAIN PUMP MOTOR	V*R	: DIODE BRIDGE
M*S	: SWING MOTOR	WRC	: WIRELESS REMOTE CONTROLLER
MR*, MRCW*, MRM*, MRN*	: MAGNETIC RELAY	X*	: TERMINAL
N	: NEUTRAL	X*M	: TERMINAL STRIP (BLOCK)
n=*	: NUMBER OF PASSES THROUGH FERRITE CORE	Y*E	: ELECTRONIC EXPANSION VALVE COIL
PAM	: PULSE-AMPLITUDE MODULATION	Y*R, Y*S	: REVERSING SOLENOID VALVE COIL
PCB*	: PRINTED CIRCUIT BOARD	Z*C	: FERRITE CORE
PM*	: POWER MODULE	ZF, Z*F	: NOISE FILTER

ERC

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3P360062-1H 2016.09